

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

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Applicant's or agent's file reference HL80825002ER		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB02/05800	International filing date (day/month/year) 19.12.2002	Priority date (day/month/year) 27.12.2001	
International Patent Classification (IPC) or both national classification and IPC G06K13/00			
Applicant FLYING NULL LIMITED et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 02.07.2003	Date of completion of this report 18.09.2003
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Lorne, B Telephone No. +31 70 340-1002 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB02/05800

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-16 as originally filed

Claims, Numbers

1-20 received on 02.07.2003 with letter of 01.07.2003

Drawings, Sheets

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/GB02/05800**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-20
	No: Claims	
Inventive step (IS)	Yes: Claims	1-20
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-20
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1: US-A-5 802 328 (YOSHIMURA YOSHIMASA) 1 September 1998 (1998-09-01)

D2: FR-A-2 775 809 (FINALUXE) 10 September 1999 (1999-09-10)

Document D1 which is considered as being the closest prior art to the subject-matter of claim 1 discloses an apparatus (see claim 1) comprising :

- a master unit (information processing device)
- one or more replacement units (PC cards) which connect to the master unit
- a connection state detecting means
- a verification means checking if the electrical contacts of the connector adapted on the replacement unit are correctly forced into the card slot of the information processing device.

Claim 1 differs from D1 in that a remotely detectable tag is provided on the replacement unit. The master unit interrogates this tag to determine the authenticity and/or the correct connection of the replacement unit.

The subject matter of independent claim 1 is therefore novel (Article 33(2) PCT).

The disadvantage of interlocks that have been employed for connecting a master unit to a replacement unit is that they are easy to copy and the number of valid replacement parts is limited. Moreover it is not possible, with this kind of interlocks, to detect remotely the authenticity of a replacement unit. Electronic keys with integrated circuits are as well used (see for instance document D2), however the cost of such devices is inappropriate for low cost replacement units.

The problem is to design a device which can identify the replacement units as well as the correct connection and modifies by itself its functioning.

In D2, an electronic key is incorporated inside a wristwatch for the purpose of identification. The replacement of a wristwatch by a copy or an original one has no effect on the functioning of the watch.

In D1, the authenticity of the PC card cannot be remotely detected.

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The skilled man would not consider document D2 for the problem of correct connection as this problem is not mentioned in D2 and it would not be an obvious procedure for the skilled man to incorporate the teaching of document D2 in document D1 in order to design the apparatus of the present invention and to solve the problem of authenticity. It would still miss the reader which is external in document D2 and has no effect on the operation of the master unit.

Thus, the subject-matter of claim 1 involves an inventive step and satisfies the criterion set forth in Article 33(3) PCT.

As a consequence, the subject matter of dependent claims 2-20 showing additional technical features of further embodiments also satisfies the criteria set forth in Article 33 (2)+(3) PCT.

CLAIMS:

1. An apparatus comprising a master unit and one or more replacement units which connect to the master unit
5 so as to facilitate the operation of said apparatus, the apparatus being provided with a verification means to determine the authenticity and/or the correct connection of the replacement unit, wherein if the replacement unit is not found to be authentic, or is
10 incorrectly connected to the master unit, the operation of the apparatus is modified.
2. An apparatus as claimed in claim 1, wherein the verification means comprises: i) a remotely detectable
15 tag provided on, or incorporated in, the replacement unit; and ii) an interrogation means provided in the master unit for interrogating a replacement unit to determine the authenticity of that unit and/or determine if the replacement unit is correctly
20 connected to the master unit, as indicated by the response of the remotely detectable tag.
3. An apparatus as claimed in claim 2, wherein the interrogation means comprises: i) a magnetic field
25 generating means for generating a magnetic field in the region where the replacement unit will be connected; and ii) a means for detecting the response of the tag to said magnetic field.
- 30 4. An apparatus as claimed in claim 2 or 3, wherein the remotely detectable tag comprises one or more pieces of magnetic material.

5. An apparatus as claimed in claim 4, wherein the magnetic material comprises low coercivity, high permeability magnetic material.

5 6. An apparatus as claimed in any one of claims 2 to 5,
wherein the tag comprises a plurality of discrete
elements and wherein the elements represent two levels
of encoded information so that the content of one of
the levels of encoded information is capable of being
10 read by interrogation through the packaging of the
replacement unit and/or interrogation at a greater
distance from the interrogation means than the content
of the other level of encoded information.

15 7. An apparatus as claimed in any one of claims 2 to
6, wherein the tag comprises a plurality of discrete
elements which are arranged such that the relative
positions of the elements represents information.

20 8. An apparatus as claimed in claim 7, wherein the
information represented by the plurality of elements
identifies the type of replaceable unit and wherein the
operation of the master unit is modified in accordance
with the type of replaceable unit which is or has been
25 connected.

9. An apparatus as claimed in claim 2, 3 or 4, wherein
the tag comprises a) a first magnetic material having a
low magnetic coercivity and b) a second magnetic
30 material having a medium or high magnetic coercivity
and being capable of being permanently magnetised.

10. An apparatus as claimed in claim 9, wherein

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ART 34 AMST

selected regions of the second magnetic material are permanently magnetised to form a magnetic pattern.

11. An apparatus as claimed in claim 10, wherein a
5 recording head in contact with the second magnetic material is required in order to form the magnetic pattern thereon.

12. An apparatus as claimed in any one of claims 9, 10,
10 or 11, wherein the interrogation means further comprises a demagnetising coil which serves, in use, to erase or modify the magnetic pattern.

13. An apparatus as claimed in claim 9, 10, 11 or 12,
15 wherein the tag further comprises a protective layer.

14. An apparatus as claimed in any preceding claim,
wherein the master unit comprises an electric
toothbrush handle and the replaceable unit comprises a
20 brush.

15. An apparatus as claimed in any preceding claim,
wherein the master unit comprises a printer and the
replaceable unit comprises a printer cartridge.

25 16. An apparatus as claimed in any preceding claim,
wherein the modification of the operation of the apparatus does not comprise preventing the operation of the apparatus.

30 17. An apparatus as claimed in any preceding claim,
wherein the modification of the operation of the apparatus comprises a (predetermined), sub-optimum

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ART 34 ADPT

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default operating mode.

18. An apparatus as claimed in any preceding claim,
wherein the operation of the apparatus comprising the
5 master unit and the replacement unit serves a medical
application.

19. An apparatus as claimed in claim 18, wherein the
master unit comprises a medicine dispensing pump and
10 the replacement unit comprises a medical infusion tube.

20. An apparatus as claimed in claim 18 or 19, when
read as appended to any one of claims 1 to 15, wherein
the modification of the operation of the apparatus
15 comprises suspending the operation of the apparatus.

21. An apparatus substantially as herein described with
reference to Figures 2 to 7 of the accompanying
drawings.

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